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#### REMARKS

Claims 1-21 are pending. Claims 1 and 6 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent Application Publication No. 2004/0129177 to Cadoret. Claims 2-4 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Cadoret in view of alleged Admitted Acknowledged Prior Art ("AAPA"). Claims 5 and 7-9 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Cadoret in view of U.S. Patent No. 6,068,693 to Garforth et al. Claims 10-21 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Cadoret in view of AAPA and further in view of Garforth et al. Claims 1-21 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,570,517 to Luker in view of Cadoret and Garforth et al.

Applicant has amended Claims 1, 2, 10 and 17 to clarify the present invention. Claims 3 and 11 have been cancelled. Applicant respectfully traverses the §102(b) and §103(a) rejections for the reasons set forth below.

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**§102 Rejections Are Overcome**

A claim is anticipated under 35 U.S.C. §102 if each claimed element is found in a single prior art reference. *Scripps Clinic & Research Foundation v. Genentech, Inc.*, 927 F.2d 1565, 1576 (Fed. Cir. 1991); *Carella v. Starlight Archery and Pro Line Co.*, 804 F.2d 135, 138 (Fed. Cir. 1986). There must be no difference between the claimed invention and the reference disclosure, as viewed by an ordinary artisan. *Scripps Clinic & Research Foundation v. Genentech, Inc.*, 927 F.2d at 1576.

Applicant's independent Claim 1 recites a method of processing crude clay ore having a high grit content, comprising:

- removing moisture entrained in crude clay ore by injecting the crude clay ore into a heated air stream flowing through a dryer, wherein a temperature of the air stream is maintained between 600°F and 900°F;
- pulverizing the crude clay ore into individual mineral particles substantially simultaneously with the drying step; and
- separating the individual mineral particles into respective product streams.

Independent Claims 10 and 17 contain similar recitations.

Cadoret fails to teach all of the recitations of independent Claim 1.

Cadoret describes a process for the dehydroxylation of aluminum silicate in which particles containing aluminum silicate are exposed to a temperature of at least 500°C (932°F) and wherein the particles are in the form of a dry powder that is transported in a gas stream at a temperature of from 600°C to 850°C (1112°F to 1562°F), for a time which is sufficient to achieve the desired degree of dehydroxylation. Applicant's independent Claim 1 recites that crude clay ore is injected into a heated air stream maintained at a temperature between 600°F and 900°F. Because the recited temperature range is less than any of the temperatures discussed in Cadoret and required for dehydroxylation, Cadoret fails to anticipate Applicant's independent Claim 1. In view of the above, the rejection of independent Claim 1 under 35 U.S.C. §102 is overcome.

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### **§103 Rejections Are Overcome**

A determination under §103 that an invention would have been obvious to someone of ordinary skill in the art is a conclusion of law based on fact. *Panduit Corp. v. Dennison Mfg. Co.* 810 F.2d 1593, 1 U.S.P.Q.2d 1593 (Fed. Cir. 1987), *cert. denied*, 107 S.Ct. 2187. After the involved facts are determined, the decision maker must then make the legal determination of whether the claimed invention as a whole would have been obvious to a person having ordinary skill in the art at the time the invention was unknown, and just before it was made. *Id.* at 1596. The United States Patent and Trademark Office (USPTO) has the initial burden under § 103 to establish a *prima facie* case of obviousness. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988).

To establish a *prima facie* case of obviousness, the prior art reference or references when combined must teach or suggest *all* the recitations of the claims, and there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. M.P.E.P. § 2143. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. M.P.E.P. § 2143.01(citing *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990)). As emphasized by the Court of Appeals for the Federal Circuit, to support combining references, evidence of a suggestion, teaching, or motivation to combine must be **clear and particular**, and this requirement for clear and particular evidence is not met by broad and conclusory statements about the teachings of references. *In re Dembiczak*, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999). The Court of Appeals for the Federal Circuit has stated that, to support combining or modifying references, there must be **particular** evidence from the prior art as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed. *In re Kotzab*, 55 U.S.P.Q.2d 1313, 1317 (Fed. Cir. 2000).

Furthermore, as recently stated by the Federal Circuit with regard to the selection and combination of references:

This factual question of motivation is material to patentability, and could not be resolved on subjective belief and unknown authority. It is improper, in determining

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whether a person of ordinary skill would have been led to this combination of references, simply to "[use] that which the inventor taught against its teacher." W.L. Gore v. Garlock, Inc., 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983). Thus the Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion....

*In re Sang Su Lee*, 277 F.3d 1338, 1343 (Fed. Cir. 2002).

Applicant's independent Claim 1 recites a method of processing crude clay ore having a high grit content, comprising:

- removing moisture entrained in crude clay ore by injecting the crude clay ore into a heated air stream flowing through a dryer, wherein a temperature of the air stream is maintained between 600°F and 900°F;
- pulverizing the crude clay ore into individual mineral particles substantially simultaneously with the drying step; and
- separating the individual mineral particles into respective product streams.

Independent Claims 10 and 17 contain similar recitations.

Cadoret, which is cited as either a primary or secondary reference in each of the rejections under §103, describes a process for the dehydroxylation of aluminum silicate in which particles containing aluminum silicate are exposed to a temperature of at least 500°C (932°F) and wherein the particles are in the form of a dry powder that is transported in a gas stream at a temperature of from 600°C to 850°C (1112°F to 1562°F), for a time which is sufficient to achieve the desired degree of dehydroxylation. As is known to those of skill in the art of the present invention, dehydroxylation (also referred to as "calcination") is the complete removal of water from the lattice structure of a crystalline mineral.

Dehydroxylation is distinguished from drying. In drying, mechanically held water is driven off by heating, which occurs at significantly lower temperatures than required by dehydroxylation.

Dehydroxylation or calcination is much more than the driving off of water. As known to those skilled in the art of the present invention, dehydroxylation causes the collapse of the crystal structure of a mineral and thereby causes a chemical change in the mineral. For example, kaolin is a hydrous material with about 14% water bound in the interstices of the crystalline structure thereof. When kaolin is dehydroxylated, the water is completely

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removed from the crystalline lattice, causing the crystalline structure to collapse and resulting in amorphous aluminosilicate, also referred to as metakaolin.

In addition, and as known to those skilled in the art, dehydroxylation of kaolin causes agglomeration, the creation of additional particles (impurities). Because dehydroxylation adds impurities, the dehydroxylation process of Cadoret teaches away from Applicant's invention which is directed to removing impurities from high grit content crude clay ore. One skilled in the art would not look to the dehydroxylation process of Cadoret to solve the problem solved by Applicant's invention.

Thus, dehydroxylation, as taught by Cadoret, would change the chemical composition of kaolin being processed and would require an additional step to be performed *i.e.*, to remove particles (impurities) created by agglomeration. Thus, one skilled in the art would not look to Cadoret for ways to process kaolin from crude clay ore. As such, Cadoret cannot support a rejection under §103.

The remaining references, Luker and Garforth et al, fail to teach or suggest all of the recitations of Claim 1-21, either alone or in combination. Luker describes a dryer that may be utilized in accordance with embodiments of the present invention. Luker fails to teach or suggest all of the recitations of Claim 1. Specifically, Luker fails to teach or suggest pulverizing crude clay ore into individual mineral particles substantially simultaneously with the drying step and then separating the individual mineral particles into respective product streams.

Garforth et al. describes a flocculation process for producing kaolin wherein the addition of water to crude clay ore is required to produce a slurry. Thus, Garforth teaches away from the "dry" process recited in Applicant's independent Claim 1, wherein moisture is removed from crude clay ore. Moreover, Garforth et al. fails to teach or suggest pulverizing crude clay ore into individual mineral particles substantially simultaneously with drying step. Garforth et al also fails to teach or suggest separating the individual mineral particles into respective product streams.

Thus, for at least the reasons cited above, Applicant respectfully asserts that the rejections of independent Claims 1, 10 and 17, and all claims depending therefrom, under

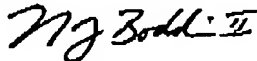
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35 U.S.C. §103 are improper. Accordingly, Applicant respectfully requests withdrawal of the present rejections under 35 U.S.C. §103.

**Conclusion**

In view of the above, it is respectfully submitted that this application is in condition for allowance, which action is respectfully requested.

Respectfully submitted,



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**CERTIFICATION OF FACSIMILE TRANSMISSION UNDER 37 CFR § 1.8**

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Erin A. Campion